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ABSTRACT

Linguistic borrowing from English to Jordanian Arabic at the lexical level is described, focusing on phonology and the extent to which Jordanian Arabic has affected the phonetic structure of English loans assimilated partially or completely into it. Conspicuous distinctive sound features in the two languages that may affect non-native speakers' pronunciation of loan words are examined, and common patterns of phonemic interference and substitution are analyzed. Aspects of the phonology of the assimilation of loan words discussed include devoicing, voicing, emphasis (or velarization), gemination, consonant cluster simplification, flapping, and vowel lengthening. Three sociolinguistic trends in English loan word assimilation are noted: (1) one group of speakers attributes considerable prestige to lexical innovation and borrowing and strives to show adequate knowledge and near-native English speech; (2) a second group, the majority, uses loan words unknowingly and exerts a great influence on their morphology, with a near-complete morpho-phonemic adaptation of some words; and (3) classicists or purists tend to resist all traces of foreign linguistic encroachment on Arabic and search for genuine Arabic terms or coinages for foreign concepts. (MSE)

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# The Phonological Assimilation of Borrowing

Saleh Suleiman

## 0 Introduction:

The aim of this paper is to consider in general terms the ways in which different languages may be affected by mutual contact and in particular to look at the way the Arabic language is affected by contact with English. Language contact and bilingualism are generally viewed in terms of the differences and dissimilarities between the languages in contact and are normally stated in the domains of phonology, morpho-syntax, and lexicon. For this to be achieved, a type of differential description is established in order to determine the degree of structural homogeneity of the languages in contact and the precedents for borrowing in each.

The thrust of this paper is to put forward a description of linguistic borrowing from English into Arabic on lexical level. In more specific terms, it studies the phonology of loanwords, and the extent to which Jordanian Arabic has affected the phonemic structure of English loans which have been assimilated either completely or partially into the system of Jordanian Arabic.

## 1 The Phonological System of Jordanian Arabic:

The phonemic inventory of consonant phonemes in Jordanian Arabic may be represented by the following table:

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TABLE 1

JORDANIAN ARABIC CONSONANT PHONEMES

| | Bilabial | Labiodental | Plain Interdental | Emphatic Interdental | Plain Dental | Emphatic Dental | Alveolar | Alveopalatal | Palatal | Velar | Uvular | Pharyngeal | Glottal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VI Stops | | | | | t | ṭ | | | | k | (q) | | ʔ |
| Vd | b | | | | d | ḍ | | | | (g) | | | |
| VI Fricatives | | f | θ | | s | ṣ | | sh | | | x | ḥ | h |
| Vd | | | ð | (ð̣) | z | ẓ | | (ʒ) | | | ɣ | ʿ | |
| VI Affricates | | | | | | | | c (=tʃ) | | | | | |
| Vd | | | | | | | | j (=dʒ) | | | | | |
| Nasals | m | | | | | | n | | | | | | |
| Lateral | | | | | | | l | | | | | | |
| Trills | | | | | | | r | | | | | | |
| Semi-vowels | w | | | | | | | | y | | | | |

( ) = Phonemes between brackets are not represented in each regional variety of Jordanian Arabic. Some of them are dialect specific, and no one speaker utilizes them all.[1]



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TABLE 2

AMERICAN ENGLISH CONSONANT PHONEMES

| | Bilabial | Labiodental | Interdental | Alveolar | Alveopalatal | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|---|---|
| V1 Stops | p | | | t | | | k | |
| Vd | b | | | d | | | g | |
| V1 Affricates | | | | | c (=tʃ) | | | |
| Vd | | | | | j (= dʒ) | | | |
| V1 Fricatives | f | | θ | s | sh (ʃ) | | | h |
| Vd | v | | ð | z | ʒ | | | |
| Nasals | m | | | n | | | ŋ | |
| Laterals | | | | l | | | | |
| Semi-vowels | w | | | | r | y | | |

This chart is adopted, with modification, from Gleason 1966 (revised edition), and Ladefoged (1975).

As Table 1 indicates, 32 consonant phonemes are identified in the colloquial Arabic of Jordan. The most noticeable feature is the use of "emphatic"[2] sounds such as /ṭ ḍ ṣ ẓ/, which may also be called "velarized" or "pharyngealized". As Obrecht (1968:19) put it, the Arab grammarians describe the consonants involved in such terms as 'dark, fat, thick, corpulent', applying the Arabic word mufaXXama 'heavy'. According to Jakobson (1957:106), "The characteristic articulatory features of all the emphatic phonemes is the contraction of the upper pharynx." These emphatics are generally articulated further to the back of the mouth than the nonemphatics, and they are accompanied by stronger aspiration. The existence of such features explains the tendency of Arabic bilinguals to project into English some features of pharyngealization and gemination.[3] In other words, Arabic speakers use the framework of the phonemic system of Arabic for the new language (i.e. American English).

The contrast between the American English and the Arabic sound systems demonstrates that American English makes greater use of lips and the front part of the mouth, whereas Arabic stresses the use of post-velar sounds as well as the pharyngealization which is a distinctive feature of Arabic. The phonemes /ḥ/ and /ʿ/ are pharyngeal fricatives, voiceless and voiced respectively. Needless to say, such phonemes are lacking in the phonemic inventory of American English consonants.

## 1.1 Contrastive Phonology

The main focus of this section is to come up with a diagnosis of the conspicuous distinctive sound features in the systems of the two languages which may affect the speech of non-native speakers when using loanwords. To

illustrate this idea let us consider the phonemes /p/ and /v/. A close investigation of the sound system of both English and the Arabic of Jordan reveals that the two phonemes do not exist in Jordanian Arabic. If the analysis is to be taken in two directions, that is, if American English is contrastively analyzed with Arabic for Arabic speakers, and Arabic is contrastively analyzed with American English for English speakers, then what holds true for English holds true for Arabic: there are phonemes in English which do not exist in Arabic, and there are phonemes in Arabic which do not exist in English. For example, while the phonemic system of English includes /p/ and /v/, Arabic lacks these two phonemes as well as others. The consonants represented in Table 1 exclude phonemes introduced by borrowing. For some Arabic linguists, the consonant phonemes /p/, /v/ have been added to the Arabic phoneme inventory: as Butros (1963:47) puts it, /p/ and /v/ in Jerusalem Arabic are loan phonemes. In fact very few English consonants have a one-to-one correspondence with Arabic consonants. For example, the English phonemes /t, d, s, z/ may be interpreted as /ṭ, ḍ, ṣ, ẓ/ as well as /t, d, s, z/ . In other words, they might be interpreted as either simple or emphatic. The emphatic phonemes tend to produce a lowering of the vowels in their immediate vicinity. For instance, while unemphatic /d/ and /s/ are followed by the high vowel /i/ in /dim/ 'dim' and /sinama/ 'cinema' respectively, emphatic phonemes often produce low back vowels, e.g., /ṭann/ 'ton' /baṣ/bus 'baṭṭariyyi'/ 'battery', etc.

Harrell (1957:75-76) argues that phonetically, emphasis can be described generally as a pharyngeal constriction or velarization cooccurring with the conso-

nantal articulation (except possibly in items such as /ᶜ/) and resulting in characteristic vowel alternations, which may be briefly stated as backed and/or lowered. Acoustically, emphasis is detectable as a lowering of the second formant in the speech segment (Jakobson et al 1952:50). Obretch (1968:22-23) states that emphasis may be analyzed as a vowel feature which affects consonants, or as traditionally, a consonant feature which affects vowels. However, both physical and distributional evidence point to the conclusion that analyzing emphasis as a consonantal feature would be preferable. In order to show this, one can make the statement that in a text if there is a sequence neither initial nor final--the central segment is always a consonant. For example, in the English loan /ḅaṭṭaariyyi/"battery", emphasis falls on the consonantal segment. One would incline to say, therefore, that the traditional consonant-marking transcription of Arabic reflects adequately the structure of the language.

## 1.2 Phonemic Substitution

The fact that some American English consonants do not exist in the colloquial Arabic of Jordan poses a serious problem which affects the production of some English consonant phonemes by Arabic speakers as a result of interference from the native language (i.e., Arabic). Phonological interference results when a speaker perceives and produces the sounds of one language which is designated secondary (i.e., American English) in terms of another designated as primary (i.e., Arabic). Interference arises when a bilingual identifies a phoneme of the secondary system, and in producing it subjects it to the phonetic rules of the primary language (Weinreich 1953).

Phonological interference between English and Arabic appears to occur specifically in those areas where there are no native language parallels to the target language form (i.e., American English), or where the native and target language forms are distinctly different from each other. This type of overlapping is always ultimately caused by interference from Arabic.

1.3 Consonants:

On the phonological level one may identify two types of phonetic interference:

1.3.1 Underdifferentiation--occurs when two sounds of the secondary system whose counterparts are not distinguished in the primary system are confused. In this context, the English phoneme /p/ is perceived and produced as /b/ by most Arabic speakers. The reason for this confusion is that the phonemic system of Arabic lacks the phoneme /p/.

1.3.2 Overdifferentiation--involves the imposition of phonemic distinctions from the primary system on the sounds of the secondary system, where they are not required. For example, since consonantal length or gemination is phonemic in Arabic, native speakers of Arabic tend to lengthen the pronunciation of double consonants in a word like connect, which they produce as /kunnikt/.

Listed below are some of the major phonological difficulties encountered by most Arabic speakers, /p/ vs. /b/: since Arabic lacks the phoneme /p/, most Arabic speakers have difficulty learning and producing the English /p/ as separate from /b/, e.g. the word park is produced as /baark/ and pet as /bet/ or rather /bIt/. Actually, the /p/-/b/ distinction poses a serious problem for most Arabic speakers. Interestingly enough, a case of "hypercorrection" occurs among those who strive to avoid substituting /b/ for /p/ on the assumption that the failure to make the distinction is stigmatized.

Thus, the way in which some /b/ sounds are pronounced resembles those of /p/, which suggests an incorrect analogy. For example, the word paperback is pronounced as /peeparpaak/ instead of /peeparbaak/.

The case for other consonant phonemes seems to be less problematic. The phonetic descriptions of some English phonemes and their occurrences resemble those of their Arabic counterparts. For example, the following set of English phonemes cause no trouble to native speakers of Arabic: / b m f n k θ w y/. However , the confusion arises when the phonetic description of some English phonemes differs from that of their Arabic counterparts, e.g. /r/: American English /r/ is retroflexed while the Arabic /r/ is either flapped or trilled. This makes it difficult for an Arabic speaker to produce a native-like English /r/. According to Al-Ani (1970: 33), the Arabic /r/ is a voiced dental trill which is pharyngealized not only when it occurs next to pharyngealized consonants but whenever it is in the vicinity of /a/ or /aa/ as well.

1. 4 Vowels:

The basic Arabic vowel system consists of three short vowels: /a u i/ with their corresponding long forms /aa uu ii/. Two diphthongs are generally identified in the system of Arabic /aw/ and /ay/. On the other end of the spectrum, English has more vowels, glides and diphthongs than Arabic; moreover, the vowel structures of the two languages are quite different (DLI 1968:21).

A valid explanation for these difficulties may be attributed to the fact that there are two different ways of patterning the sounds of the two languages. Besides, the fact that most language learners pay great attention to the written form complicates the matter and leads to erroneous pronunciation.

Along the same lines, the discrepancy between English and Arabic orthography brings about further complications and confusions.

The vowel system in the colloquial Arabic of Jordan departs somewhat from the basic Arabic pattern stated above. It consists of three short vowels /a u i/ and five long vowels /aa uu ii ee oo/, which may be presented in the following table:

TABLE 3

ARABIC VOWELS

| | Front | | Central | | Back | |
|---|---|---|---|---|---|---|
| | Long | Short | Long | Short | Long | Short |
| High | ii | i | | | uu | u |
| Mid | ee | | | | oo | |
| Low | | | aa | a | | |

TABLE 4

AMERICAN ENGLISH VOWELS[4]

| | Front | Central | Back |
|---|---|---|---|
| High | ii | | uu |
| | I (i) | | U (u) |
| Mid | e | ə | o |
| | ɛ (e) | | |
| Low | | a | |

This chart is adapted, with modification, from Gleason 1966 (revised edition) and Ladefoged 1975.

One effect of Arabic on the pronunciation of English vowels is the insertion of the glottal stop /ʔ/ before initial vowels. As we may expect, those words in Arabic which are normally considered to begin with a vowel usually are initiated with a glottal stop before the vowel (Al-Ani 1970). There are thus no vowel initial words in Arabic.

The difficulty of producing the American English lax-mid front vowel /e/ = /ɛ/ suggests that most Arabic speakers fail to hear and produce the word ten as /tin/ and sex as /siks/. One way to explain the substitution may be attributed to the fact that the phonological system of Arabic lacks the vowel /e/.

An important point to consider here is that since Jordanian Arabic does have /ii/ and /ee/ in its inventory, one would expect Jordanian speakers to make the /i/ -/e/ distinction in English. My position on that is based on the fact that since laxness or shortness is the distinctive feature that marks the correct pronunciation of problematic words in this context such as ten, sex, better, etc., it is very unlikely that the focus of attention might be directed towards a categorically different tense feature, i.e., /ee/. It is thus legitimate to postulate that the auditory mechanisms of sound decoding perceive a lax /i/ instead of a lax /e/ = /I/ for /ɛ/ rather than the other way around [i.e., perceiving a tense /ee/). This implies the existence of hierarchies of features in the perception and decoding of sounds.

1.5 Vowel Reduction:

An important aspect of vowel production by Arabic speakers is failure to reduce certain vowels in their pronunciation. They tend to produce their vowels in the strong form. The fact that speakers of Arabic depend on spelling pronunciation leads them to pronounce all vowels in the same way (the strong form), failing to reduce them when necessary. This may be illustrated in the way they pronounce words like local, vowel, etc.

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For instance, the word local is pronounced /lookal/ instead of /lookəl/, and vowel is pronounced as /vawil/ instead of /vawəl/. This may be attributed to the fact that Arabic phonology does not include rules of vowel reduction; on the contrary, Arabic speakers tend to apply a rule of vowel insertion to break up a consonant cluster. In Arabic, consonant clusters are restricted to two consonants. For this reason, most Arabic speakers insert an epenthetic vowel to break up the consonant cluster in some English words containing three or more consonants, such as background which they pronounce as /baakigraawnd/ instead, and the word against which they pronounce as /ʔageenist/.

1.6 Loanwords and The Impact of Phonology:

Linguistic borrowing has been defined by Haugen (1953) as tempt to reproduce in one language patterns that have pre- y been found in another. This means that in his attempt to uce a new item, the speaker tends to reproduce the item in the context of the pattern of his native language. The reproduction may be more or less exact, as determined by the way in which importation and substitution have been blended. As Haugen (1972: 75) put it, the distinction between importation and substitution is important because it can serve as the typological classification of loans. Together they constitute the two ways in which linguistic reproduction can take place.

As far as loanword phonology is concerned the simplest and most common substitution takes place when a native sound sequence is used to imitate a foreign one. Full or complete substitution is characteristic of native language learners and is heard as a oreign accent" by native speakers.

.1 The Assimilation of Loanwords

The complete assimilation of loanwords allows for the phology of the recipient language to affect the pronunciation of ese loans. As I pointed out earlier, some characteristic features of Arabic consonants, especially those of velarization and

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gemination, differ from those of English consonants. In other words, "very few English consonants have a one-to-one correlation with Arabic consonants, and this is reflected in the interpretation given by Arabic speakers to some English consonants" (Butros 1963:263). For example, English /t/ becomes Arabic /ṭ/ and /ţ/ and English /s/ becomes Arabic /s/ and /s̱/.

The corpus of loanwords present in the speech of Jordanians suggests that the phonological classification of loanwords may evidence two levels:

a. Loanwords marked by phonological transfer: these result from the reproduction of a model pattern in a manner which is very close to the original. A good example of this type is the word /ʔoorkistra/ 'orchestra'.

b. Loanwords marked by phonological substitution: these result from the substitution of native features for some features of the source language, e.g., /brootiin/ 'protein' where /b/ is substituted for /p/ of the model (Sa'id 1964). Subsequently, the phonological integration of loanwords into Arabic brings about a phonic interference which is conducive to phonemic substitution.

1.6.2 Loanword phonology may be described in terms of general phonological processes which control, to some extent, the most common sound changes in the speech of Arabic bilinguals. The sum of these rules, however, leaves some unanswered questions which are motivated by certain irregular forms or exceptions to any given rule.

a. Devoicing: a characteristic feature of loanword phonology is the devoicing of certain phonemes where they are usually voiced. Examples may be found in the following:
   g ---→ /k/
   garage --→ /karaaj/. Although /g/ is a phoneme in some dialects of Jordanian Arabic, speakers of other dialects produce the voiceless /k/ instead.
   /v/ --→ /f/
   vitamin --→ /fitamiin/

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The change of /v/ to /f/ may be accounted for in light of the fact that Arabic does not recognize the voiced labio-dental fricative /v/ but recognizes its voiceless counterpart. Sa'id (1964:15) notes that the pairs (b,p) and (f,v) represent allophones of the phonemes customarily noted as /b,f/. /f/ is voiceless in most environments, but voiced before a following voiced stop or fricative except before /$^{c}$/ and /ḥ/, e.g. /wufuud/ 'delegations' with (f) but /wafd/ 'delegation' with (v), similarily, /daf$^{c}$/ 'pushing' and /ṣafḥ/ 'forgiveness' respectively. Khalafalla (1959:36) reports that in some dialects of Egyptian Arabic the phoneme /f/ is pronounced as /v/ before some emphatic consonants, e.g. /lavẓ/ 'pronunciation'.

In my opinion, the two arguments fall short of their goal as they fail to account for word like /ṛafḍ/ 'rejection' where the /f/ is followed by /ḍ/ which is both emphatic and voiced stop. Thus any listing of /v/ as a phoneme may only be accepted on the premise that it is a loan phoneme introduced through borrowing.

b. Voicing: as indicated earlier, the /p/ - /b/ distinction poses a serious problem to speakers of Arabic. The fact that /p/ is perceived and produced as /b/ by most Arabic speakers is an obvious case of phonic interference which may be identified (after Weinreich 1953 as 'underdifferentiation'). The fact that the phoneme /p/ is often replaced by /b/ and not by /f/ or any other sound indicates that the features bilabial and stop (rather than voicelessness) are the ones that are perceived by the hearer who then interprets or decodes it in the form of that phoneme of his own language which contains these features.

c. Emphasis: (also termed velarization or pharyngealization)

As stated earlier, very few English consonants have a one-to-one correspondence with Arabic consonants. The way /t, d, s/ are often interpreted as /ṭ, ḍ, ṣ/ by Arabic speakers is compatible with this notion. Jakobson (1957:15) calls these consonants "emphatic". The pronunciation of the words ton, double,

sauce, etc., with initial /ṭ, ḍ, ṣ/ sounds explains the effect of emphasis on the speech of Arabic bilinguals. Although emphasis occurs with both consonants and vowels, its impact is more observable in consonants. "Emphatic vowels are interpreted as allophones of nonemphatic vowels, conditioned by the presence of emphatic consonants". The effect of emphasis on vowels is marked by the centralization of high front vowels, lowering of high back vowels, and backing of low vowels (Sa'id 1964:18-19). One obvious reason for reinterpreting the quality of English phonemes (i.e., emphasizing them) is Arabic spelling. Whereas Arabic spelling recognizes only four consonants which are emphatic in pronunciation /ṭ, ḍ, ṣ, ḍ/ other consonants, unmarked graphically for emphasis, may also be emphatic. For example:

/ḅaaṣ/ 'bus'

/ṛoob/ 'robe'

These forms have emphatic sounds which are not represented in Arabic orthography.

d. Gemination: the production of geminate sounds by Arabic bilinguals is a characteristic feature of loanword phonology. A major factor that affects the pronunciation of Arabic bilinguals is the influence of the spelling system in the source language (i.e., Arabic). Thus, the geminate pronunciation of certain consonants may be interpreted as a form of native language interference. Examples may be found in words like: correct, arrive, connect, attend, support, etc.

e. Consonant Cluster Simplification: a very significant aspect of Arabic phonology is its inherent resistance to three-phoneme clusters. Consequently, Arabic speakers tend to break up such clustering of consonants by inserting an epenthetic vowel. For example, the word background is often pronounced as /baakigraawnd/. Cluster simplification seems also to have affected final clusters by deleting the final consonant. This time, however, the deletion of the final consonant is not attributed to native language interference since Arabic does not resist two phoneme clusters,

e.g., /bard/ "cold", /ḥarb/ "war", /jins/ "race", etc. The most reasonable explanation relates to underlearning the rules of the English language on the part of some Arabic bilinguals. Examples may be found in words like insurance and different which are often produced as /ʔinshurin/ and /difrin/ respectively.

f. Flapping: one consideration which may be interpreted as a phonetic problem rather than a phonemic one is flapping. In the case of /t/ and /d/, there is a general tendency among Arabic speakers to produce them as dentals rather than alveolars. The way Arabic speakers produce intervocalic /t/ amd /d/ excludes the possibility of flapping. They tend to provide a careful pronunciation of words like matter, water, butter, etc.

g. Vowel Lengthening: vowel lengthening is very common among Arabic speakers. Examples may be found in the following:

| | |
|---|---|
| vitamin | /fitamiin/ |
| carton | /kartoon/ |
| album | /ʔalbuum/ |
| address | /ʔadrees/ |

This seems to be due to the fact that Arabic tends to produce stressed long vowels /aa, uu, ii/ in the final syllables of multi-syllabic words such as /tamariin/ "exercise", /m$^{c}$almiin/ "teachers", /mashhuur/ "famous", /mabluul/ "wet".

## 2. The Psychological Reality of Linguistic Change

It will be seen from the previous argument that where loanwords are concerned, phonological correspondences may be set up by comparing the segments of a word in the donor language with the corresponding segments in the recipient language. The variety of changes that English loanwords have witnessed throughout the adaptation process into Arabic do not go unnoticed. Furthermore, the linguistic change is motivated by a socio-cultrual assimilation and a psychological set up on the part of the speakers.

Three distinct trends manifest themselves in this connection:

2.1 Given that there is a systematic correlation between the linguistic behavior of a speaker and his social status, proponents of this trend attribute considerable prestige to lexical innovation and the notion of borrowing. With this in mind, they strive to show that their command of English is adequate and their pronunciation is near-native. Thus, the assimilation of English loans in the speech of this group is associated with high culture and prestige.

2.2 The second group comprises a majority that utilizes loanwords unknowingly--unintentionally--since a large number of loanwords is integrated into the colloquial and the standard varieties of Arabic. Naturally, the influence of native Arabic phonology on the production of such loans is tremendous. The morpho-phonemic adaptation of some loanwords into Arabic is rather complete.

2.3 Contrary to the first trend, there is a strong tendency among "classicists" (proponents of "purism") to resist all traces of foreign encroachment which violate the purity of Arabic. Thus, the effort to block all forms of linguistic change under the influence of a foreign language is particularly strong. As a consequence, the search for genuine Arabic terminology has always been encouraged in which Arabic terms would be coined for foreign concepts.

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## Notes

1. The geographic distribution of the potential phonemes /q g c z j d/ in the colloquial Arabic of Jordan is determined by the speaker's regional variety. The "Fallaḥi" variety, represented in rural areas, utilizes the potential phonemes /q c j d/, whereas the "Madani" variety, represented in urban areas, makes use of /z/, and the "Bedouin" variety, spoken by nonsedentary nomads, employs /g c j d/.

2. Emphasis is mainly characterized by a slight retraction of the tongue and raising of its back accompanied by constriction in the pharyngeal area. Emphasis is indicated by a subscript dot under the pertinent phoneme. Although it occurs with both consonants and vowels, emphatic vowels are intrepreted as allophones of non-emphatic vowels conditioned by the presence of emphatic consonants.

3. Gemination is the pronunciation of the same consonant twice without a pause. It involves the prolongation of the constituents and a longer closure of stops (Blanc 1952:73). The geminated consonant clusters contrast with their corresponding consonants, e.g.,

| | |
|---|---|
| /ḥaḍara/ | "he came" |
| /ḥaḍḍara/ | "he prepared" |
| /kasara/ | "he broke" |
| /kassara/ | "he destroyed" |

   These examples show how the consonant is doubled, which makes it legitimate to refer to gemination as "doubling". Gemination in Arabic is usually represented by a diacritic mark called "shaddah", "w", which appears above the pertinent consonant, e.g., /madda/ "stretched" or "extended", is believed to have the underlying structure (mad-da), according to which it is pronounced. Consequently, Arabic speakers tend to make an enormous analogy by applying the same gemination pattern to English words such as, arrive and connect which they produce as /ʔarrayv/ and /kannett/ or /kunnikt/ respectively. In essence, gemination in Arabic is equated with vowel length which is phonemic in Arabic. Thus, speakers of Arabic tend to lengthen double consonants in English words such as, correct, arrest, etc.

4. The symbols in parenthesis marked with an asterisk are my own additions in order to show correspondence with the symbols used for Arabic vowels. Diacritics are used to distinguish between tense and lax vowels: /i/, /e/, and /u/ stand for the lax vowels /I/, /ɛ/, and /U/ respectively; /ii/, /ee/, and /uu/ stand for the tense vowels /i/, /e/, and /u/. Thus my reference to the /i/ - /e/ distinction is another way of referring to the /I/ -/ɛ/ distinction.

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